

Case Report

Pulsed Electromagnetic Stimulation Therapy for Erectile Dysfunction

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ABSTRACT

Erectile dysfunction (ED) is a significant and common medical problem. Currently, there are several treatment available options for patients with ED, both non-invasive and invasive like phosphodiesterase 5 inhibitors, intra-cavernosal injections (BIMIX, TRIMIX), intraurethral prostaglandin E1 pellets, vacuum erection devices and insertion of a penile prosthesis. Most of these options are invasive, which can be troublesome for patients, and also have side-effect profiles. Pulsed-electro magnetic stimulation therapy (PLMST) has gained interest in the field of sexual medicine. In the given case author presented a successful effect of in a case of erectile dysfunction.

Keywords

Erectile dysfunction; Electromagnetic stimulation therapy; Latest treatment; Non-invasive treatment; Erection hardness scale (EGS).

INTRODUCTION

Sexual health and function are important determinants of quality of life. Erectile dysfunction (ED) is a significant and common medical problem. An estimated 150 million men worldwide have some degree of ED, and more than twice that many are expected to be affected by 2025.¹ National Institutes of Health defines ED as the inability to get or keep an erection firm enough for satisfactory sexual intercourse. The risk factors for ED are numerous and include a strong link to cardiovascular disease.² Various treatment modalities for erectile dysfunction include appropriate medical therapies including phosphodiesterase type-5 (PDE-5) inhibitors and surgical intervention in men demonstrating a lack of response to medical therapy *via* transurethral or intracavernosal revascularization or penile prosthesis.³ Pulsed electromagnetic stimulation therapy (PEMST) has gained interest in the field of sexual medicine. Magnetic fields inadequate forms and doses can increase oxygen uptake by the cell, enhance blood circulation and reverse functional impairment.^{4,5} The role of technology in the treatment of ED will be widened and more options will be available in the years to come.⁴ The authors are presenting a case of

erectile dysfunction benefited with PEMST.

CASE PRESENTATION

A 48-year-old married male patient from Jaipur belonging to construction business presented with the complaints of difficulty in achieving erections and soft erections since last 8-months. He did not have morning or night time erections since last 8-months and his last partly successful sexual exposure was 6-months back. He is a smoker, non-diabetic and non-hypertensive.

On Physical Examination

Blood pressure was 132/88, pulse rate 94/min, other systemic examination were normal.

In Other Findings

Pelvic floor muscles were weak (Electromyography (EMG) biofeedback analysis), international index of erectile function (IIEF-5) score was 6, erection hardness score (EHS) score was 1.

Table 1. Outcomes of each Session of PEMST in terms of EHS and Adverse Effects of the PEMST

S.No.	Visit	Date Conducted	Intervention Yes/No If yes, specify	Disease response to treatment	Adverse Effects of any Drug-Yes/No
1	Initial	24/9/20	PEMST Session 1	EHS 1 (no morning erections)	No
2	Follow-up 1	25/9/20	PEMST Session 2	EHS 2 (on attempting sexual intercourse)	No
3	Follow-up 2	26/9/20	PEMST Session 3	No sexual activity	No
4	Follow-up 3	27/9/20	PEMST Session 4	EHS 3 (night time erections on erotic thoughts)	No
5	Follow-up 4	28/9/20	PEMST Session 5	EHS 3 (on attempting sexual intercourse)	No
6	Follow-up 5	29/9/20	PEMST Session 6	No sexual activity morning erections present EHS 4	No
7	Follow-up 6	30/9/20	PEMST Session 7	No sexual activity morning erections present EHS 4	No
8	Follow-up 7	1/10/20	PEMST Session 8	No sexual activity morning and night erections present EHS 4	No
9	Follow-up 8	2/10/20	PEMST Session 9	EHS 4 (on attempting sexual intercourse)-successful sexual intercourse after 8-months	No
10	Follow-up 9	3/10/20	PEMST Session 10	Patient advised to follow-up after 2-weeks	No
11	Follow-up 10	17/10/20	-	EHS 4 on all sexual attempts with the partner along with marked improvement in orgasm	No

Results of Pathological Tests and Other Investigations

Results of pathological tests and other investigations showed hypercholesterolemia with normal hormonal levels (testosterone, prolactin, thyroid profile).

Treatment Plan

He was advised to undergo 10 PEMST sessions daily along with Kegel exercises 3 times a day. Each PEMST session consisted of 1-20 hz over pelvic floor muscles for 15-minutes and 1-20 hz over cavernosal nerve for 10-minutes. The result of PEMST session is as shown in Table 1.

Treatment Outcome Details

He reported marked improvements in his erections as the therapy progressed and reported morning erections. He had a successful sexual intercourse with his wife on day 5th day of PEMST. He also reported marked increase in his intra vaginal ejaculation latency time (IELT) from 1-minute to 3-minutes during the therapy session. He also reported marked improvement in orgasm. At the end of 10 session the IIEF-5 SCORE was 24, EHS was 4 and there was marked improvement in erections, orgasm and ejaculation time. He was advised to follow-up after 2-weeks post last PEMST session where he reported that he was successful in all his sexual attempts with his partner with EHS being 4. He also reported that he could now easily get an erection. He reported high satisfaction with the treatment and said he would recommend this treatment to his friends. He also happily consented to give a video testimonial for his treatment outcome.

DISCUSSION

Magnetic pulse fields induce an alternating current within the body's electrolytes affecting the cells' water content, mitochondrial function, physical properties of the membranes, nutrient, oxygen and amino acid uptake, energy production, ion membrane permeability, and macrophage migration.⁶ Magnetic fields-employed therapeutically as early as in the classical antiquity were

rediscovered in the last century.⁷ Magnetic stimulation is a simple, non-invasive method that could induce phallic engorgement and indicated this therapy might be suitable for patients with ED. In the present case author noted a significant improvement in various scores of erectile dysfunction before and after the PEMST. The authors noted almost full improvement in the present case following 10 sessions of PEMST. Similar studies were conducted by Rainer and colleagues in a double blind, placebo-controlled study assessed the efficacy of 3-weeks of impulse magnetic-field therapy for ED.⁸ The results suggested that PEMST improved erectile function at certain forms and doses.

CONCLUSION

The case described by author has shown significant improvement in the various scores of erectile dysfunction including a successful sexual intercourse after the PEMST. Hence PEMST in certain forms and doses should be considered as a one of the treatment modality for erectile dysfunction.

CONSENT

Written informed consent was obtained from the patient for publication of this case report.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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